Rev A Drawing 5/7/03

Work Order ID 139935

139935

Monday, December 14, 2015 1:52:52 PM

Item ID: D5332-043
Revision ID: PRELIM
Item Name: Rib Assembly

POSITIVE RECALL

Accept *N900040100*

Setup Start *NS1*
Stop *NS2*

Start Date: 12/14/2015 **Start Qty:** 1.00 *1*
Required Date: 12/14/2015 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** MLS **Date** DEC 15 2015 **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D5332	~~A~~ ~~A~~ Rev A 5/7/03								
100	Weld per dwg A/R S.S. rod Batch: 413141	0.00							
100 Large Fab						1v		DAS 43 9-89	DEC 23 2015
Large Fab	**Memo**	0.00							
	1- Cut D5332-5 as per dwg 2- Drill holes as per dwg D5332 using DT10192 3- Remove identification marks and deburr 4- Weld bushing in rib as per dwg and grind flush								
110	QC9- Inspect visual per QSI004- Fusion Welds	0.00							
110 QC						1	JAN 04 2016	DAS 24 9-89	
Quality Control	**Memo**	0.00							
120	QC5- Inspect part completeness to step on W/O	0.00							
120 QC						1	JAN 04 2016	DAS 24 9-89	
Quality Control	**Memo**	0.00							

POSITIVE RECALL
EFFECTIVE DEC 15 2015 AUTH MLS
RELEASED _____ DATE _____
ROIS-1016-01

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

Date :	Step #:	QTY Effective :	**MRB (QSI042) Approval**
Description Work Order Deviation		**Disposition**	**Completed By**
			Lead hand / Supervisor Approval Verification
			QC / QA Coordinator Approval

Root Cause				**FAULT CATEGORY**			
Environment	☐	☐	No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
Design	☐	☐	Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
Handling/Pre	☐	☐	Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
Material	☐	☐	Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
Internal Transport	☐	☐	Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
Tribal Knowledge	☐	☐	Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
LOA	☐	☐	Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
Substation	☐	☐	Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process				
Misidentified	☐	☐	Past Due	☐ OTHER :			

Work Order ID 139935 *139935*

Monday, December 14, 2015 1:52:52 PM

Item ID: D5332-043 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: PRELIM **Stop** *NS2*

Item Name: Rib Assembly

Start Date: 12/14/2015 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 12/14/2015 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** *NR1*

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: WNA 04	0.00				/x		DAS 43 9-89	JAN 04 2016
	Memo ***STOCK IN BASKET CELL***	0.00							
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release	0.00							
	Memo	0.00							

MLJ JAN 13 2016

POSITIVE RECALL

EFFECTIVE 15-12-15 AUTH MLJ

RELEASED S DATE 17/01/09

RD15-1016-01

Rev A Drawing attached

S 17/01/09

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause				FAULT CATEGORY			
Environment	☐	☐	No Re-verfication	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
Design	☐	☐	Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
Handling/Pre	☐	☐	Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
Material	☐	☐	Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
Internal Transport	☐	☐	Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
Tribal Knowledge	☐	☐	Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
LOA	☐	☐	Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
Substation	☐	☐	Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process				
Misidentified	☐	☐	Past Due	☐ OTHER :			

Picklist Print

Monday, December 14, 2015 1:52:56 PM

Work Order ID: 139935 *139935*

Parent Item: D5332-043 *D5332-043*

Parent Item Name: Rib Assembly

Start Date: 12/14/2015 **Required Date:** 12/14/2015

Start Qty: 1.00 **Required Qty:** 1.00

Comments: IPP REV:A 15.10.14 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D5338-1 *D5338-1* Bushing		Manufactured	No				Each	4.0000		2		DAS 43 9-89	DEC 23 2015
									** B138122→2x				
				Location		Loc Qty		Loc Code					
				prelim		4							
					138122	4							
M304TS0.500W.049 *M304TS0.500W.049* Square Tubing		Purchased	No				f	610.8802		1.926316		DAS 43 9-89	DEC 23 2015
									** 1.926→B133592				
				Location		Loc Qty		Loc Code					
				WA004		610.88021							
					M132210	21.88021							
					M133592	589							

DART AEROSPACE

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No.	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐

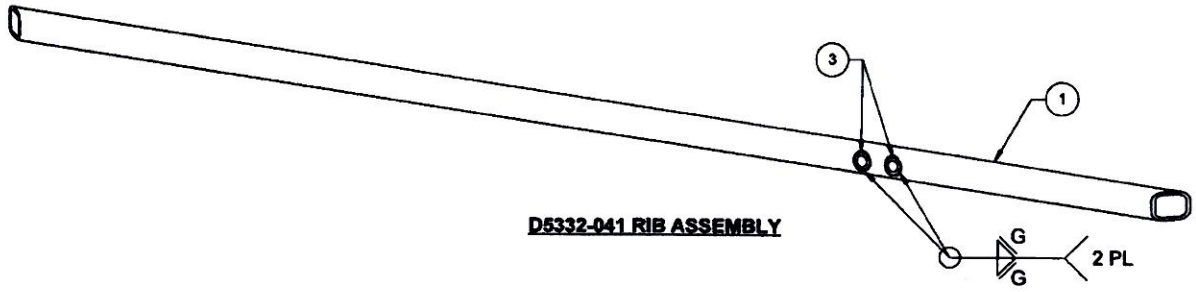
Date :	Step #:	QTY Effective :	MRB (QSI042) Approval

Description Work Order Deviation	Disposition	
		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

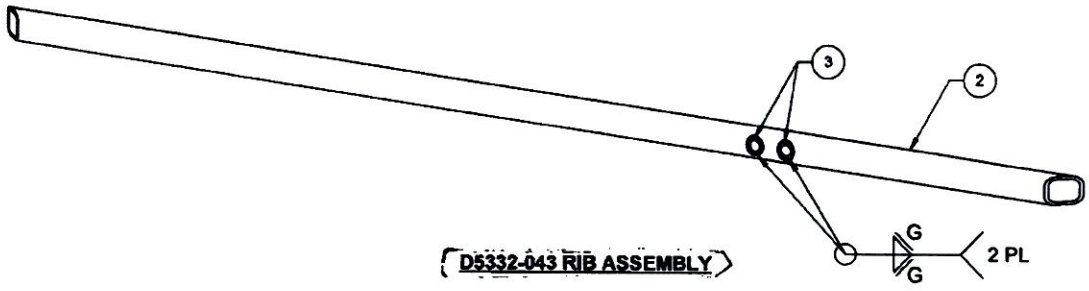
Root Cause				FAULT CATEGORY			
Environment	☐	☐	No Re-verfication	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong
Design	☐	☐	Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect
Handling/Pre	☐	☐	Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing
Material	☐	☐	Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved
Internal Transport	☐	☐	Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing
Tribal Knowledge	☐	☐	Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish
LOA	☐	☐	Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread
Substation	☐	☐	Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process				
Misidentified	☐	☐	Past Due	☐ OTHER :			

PRELIMINARY ISSUE

ITEM	QTY -041	QTY -043	P/N	DESCRIPTION
	X		D5332-041	RIB ASSEMBLY
		X	D5332-043	RIB ASSEMBLY
1	1		D5332-3	RIB
2		1	D5332-5	RIB
3	2	2	D5338-1	BUSHING



D5332-041 RIB ASSEMBLY



D5332-043 RIB ASSEMBLY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 139935 MW
1512-14

NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -041: 0.52 lbs
-043: 0.48 lbs
8) WELD PER DART QSI 004

PRELIMINARY ISSUE

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	RF	15.08.10

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO. D5332	REV. A4
MFG. APPR.	DD		SHEET 1 OF 4
APPROVED		TITLE RIB ASSEMBLY	SCALE NTS
DE APPR.			
DATE	15.08.10		

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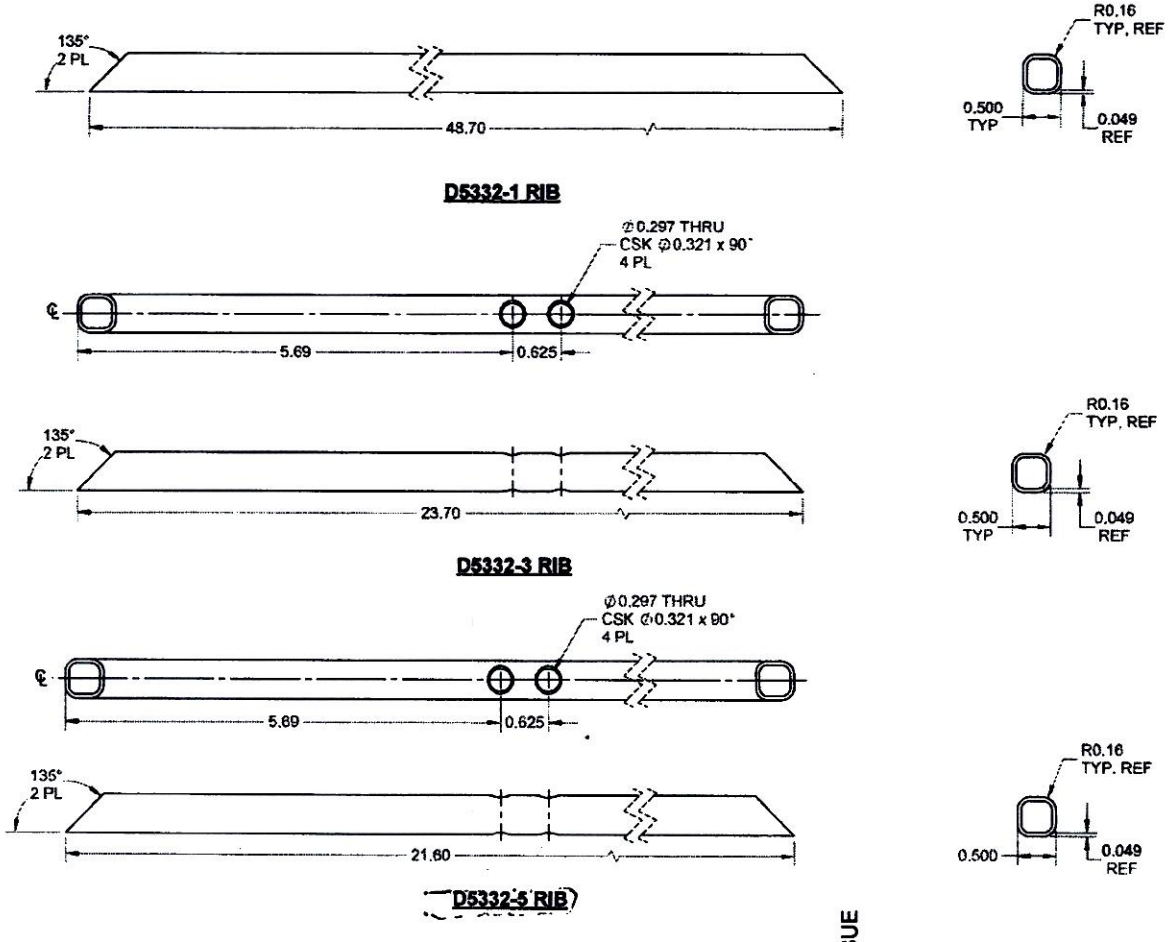

NOTES:
1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 X 0.50 X 0.049 WALL
PER ASTM A554 MILL FINISH OR ASTM A269 MILL FINISH
REF DART SPEC. M304TS0.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -1: 1.06 lbs
-3: 0.52 lbs
-5: 0.47 lbs

PRELIMINARY ISSUE

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	VS	DRAWING NO. D5332 — REV. A4 — SHEET 2 OF 4
MFG. APPR.	DD	
APPROVED		TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	15.08.10	

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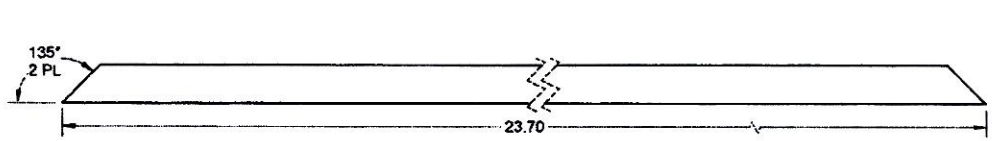
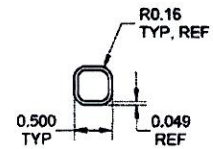
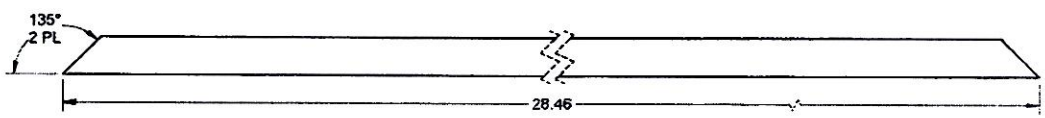
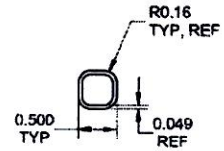


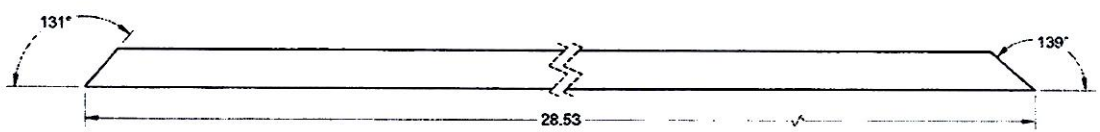
D5332-7 RIB



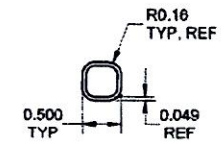


D5332-9 RIB





D5332-11 RIB



NOTES:
1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 X 0.50 X 0.049 WALL
PER ASTM A554 MILL FINISH OR ASTM A269 MILL FINISH
REF DART SPEC. M304TS0.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -7: 0.52 lbs
-9, -11: 0.62 lbs

PRELIMINARY ISSUE

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	VS	DRAWING NO. D5332 — REV. A4
MFG. APPR.	DD	SHEET 3 OF 4
APPROVED		TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	15.08.10	

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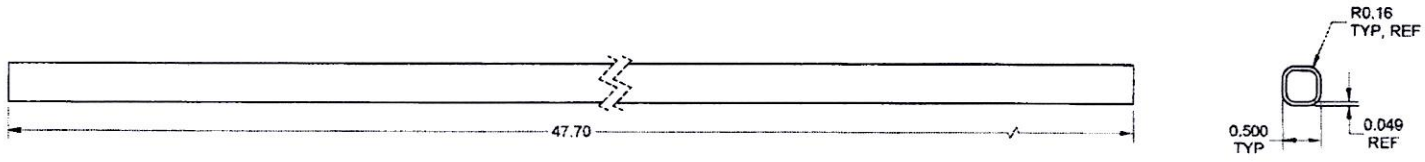
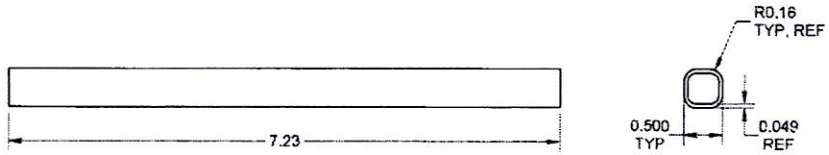


D5332-13 RIB



D5332-15 RIB

D5332-17 RIB

NOTES:
1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 X 0.50 X 0.049 WALL
PER ASTM A554 MILL FINISH OR ASTM A269 MILL FINISH
REF DART SPEC. M304TS0.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -13: 1.05 lbs
-15: 0.16 lbs
-17: 0.60 lbs

PRELIMINARY ISSUE

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	VS	DRAWING NO. D5332 — REV. A4 — SHEET 4 OF 4
MFG. APPR.	DD	
APPROVED		TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	15.08.10	

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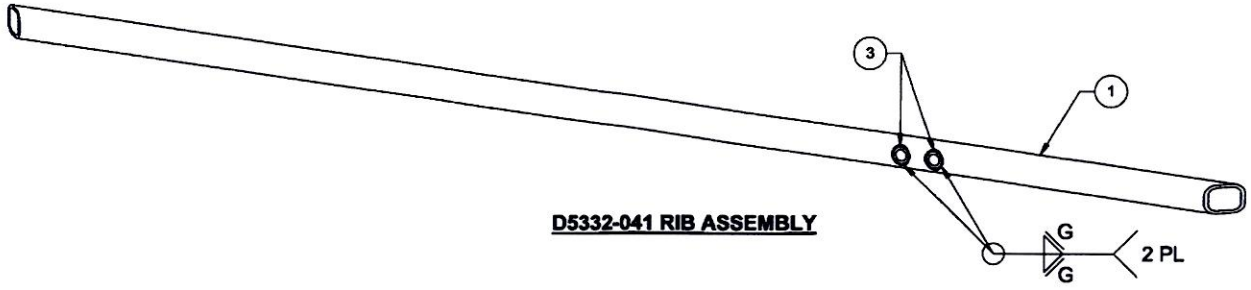
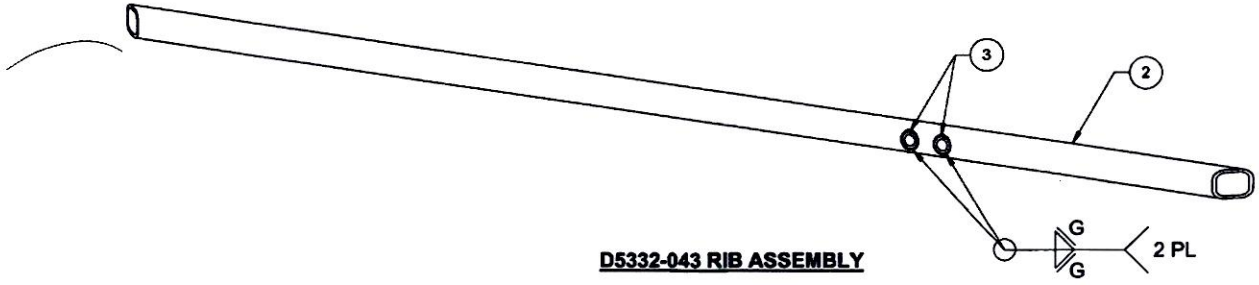
ITEM	QTY -041	QTY -043	P/N	DESCRIPTION
	X		D5332-041	RIB ASSEMBLY
		X	D5332-043	RIB ASSEMBLY
1	1		D5332-3	RIB
2		1	D5332-5	RIB
3	2	2	D5338-1	BUSHING



D5332-041 RIB ASSEMBLY



D5332-043 RIB ASSEMBLY

NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -041: 0.52 lbs
-043: 0.48 lbs
8) WELD PER DART QSI 004

RELEASED
2016 -01- 21
EW 16-506

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	RF	15.08.10

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	AK	DRAWING NO. D5332 — REV. A — SHEET 1 OF 4
MFG. APPR.	DD	
APPROVED	HS	TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.	DS	
DATE	15.08.10	

APPROVED

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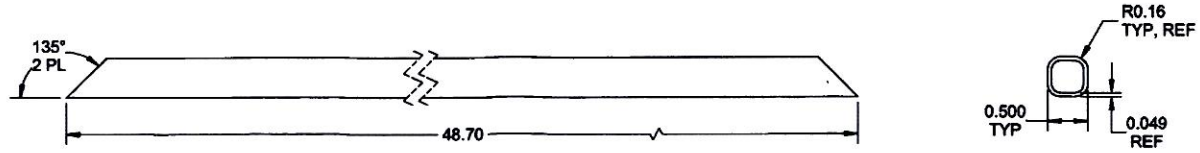
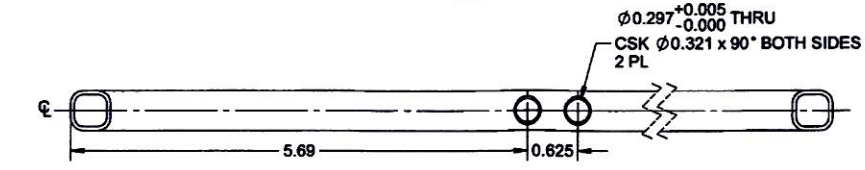
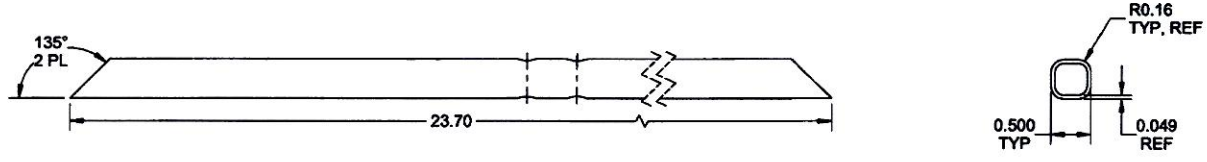
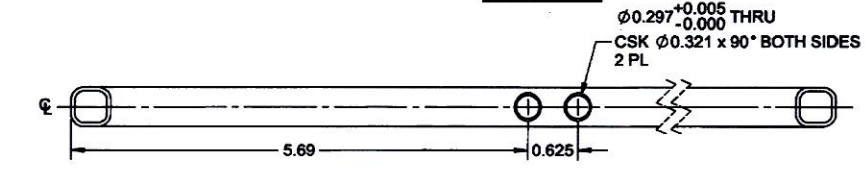


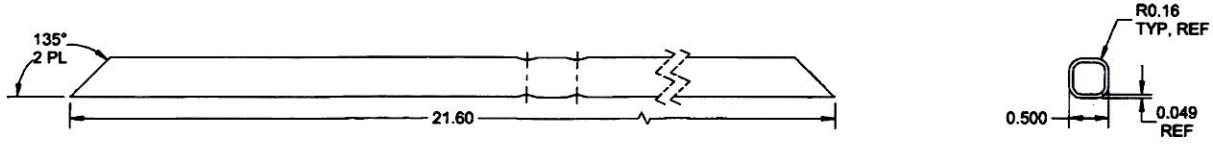
D5332-1 RIB





D5332-3 RIB





D5332-5 RIB

NOTES:
1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.50 X 0.50 X 0.049 WALL
PER ASTM A554 MILL FINISH OR ASTM A269 MILL FINISH
REF DART SPEC. M304TS0.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT -1: 1.06 lbs
-3: 0.52 lbs
-5: 0.47 lbs

RELEASED
2016 -01- 21

APPROVED

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	AK	DRAWING NO. D5332 — REV. A — SHEET 2 OF 4
MFG. APPR.	DD	
APPROVED	HS	TITLE: RIB ASSEMBLY — SCALE: NTS
DE APPR.	DS	
DATE	15.08.10	

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